

Please cancel claims 18-38 without prejudice or disclaimer  
of the subject matter contained therein.

Please add the following claims:

*Subj C1*

39. (New) A method for screening test compounds for  
bioactivity, comprising:  
(a) obtaining an array of test compounds, wherein each test  
compound is disposed on a solid support in a pattern whereby the  
position of each said test compounds can be identified by a 2-  
dimensional coordinate;  
(b) bringing the array of test compounds in close apposition  
with a detector layer; and  
(c) detecting a response of the detector layer to the test  
compound,  
wherein a response is indicative that a test compound is a  
bioactive compounds.

*b1*

*Subj B3*

40. (New) The method of claim 39, wherein the solid support is  
a porous membrane.

41. (New) The method of claim 39, wherein the solid support is  
a non-porous substrate.

42. (New) The method of claims 39, 40 or 41, wherein the  
detector layer is comprised of physiologically viable cells.

*Bulky 3*  
43. (New) The method of claim 42, wherein the physiologically  
viable cells form a monolayer.

44. (New) The method of claim 42, wherein the physiologically  
viable cells are supported by an optically clear substrate.

45. (New) The method of claims 39, 40 or 41, wherein the  
response is recorded by a sequence of images.

46. (New) The method of claims 39, 40 or 41, wherein the  
detector layer is a pH sensing surface.

*B1 C1 D1*  
47. (New) The method of claims 39, 40 or 41, wherein the  
detector layer is a temperature sensing surface.

48. (New) The method of claim 40, wherein the porous membrane is  
constructed of a non-absorbent material with pores of regular  
and defined diameter which traverse the membrane directly from  
the upper to the lower side.

49. (New) The method of claim 40, wherein the test compounds are  
allowed to diffuse from the porous membrane into a liquid layer  
overlying the detector layer.

50. (New) The method of claim 41, wherein the solid support is a  
non-porous substrate and wherein the cells are grown on a porous

membrane, whereby the test compounds are allowed to diffuse  
though the porous membrane to the cells layer.

51. (New) The method of claims 39, 40 or 41, wherein the detector layer is held stationary in the field of view of an optical detector and the array of test compounds is moved into contact with said detector layer during the course of measurement.

52. (New) The method of claims 39, 40 or 41, wherein the array of test compounds is held stationary in the field of view of an optical detector and the detector layer is moved into contact with said sample surface during the course of measurement.

*b)*  
*Claim 51*  
*Sub 1A*  
53. (New) The method of claim 42, wherein the detected response is a change in a luminescence property of the physiologically viable cells in the detector layer.

54. (New) The method of claim 42, wherein the detected response is a change in a fluorescence property of the physiologically viable cells in the detector layer.

55. (New) The method of claim 40, wherein the array of test compounds is generated on the solid support by combinatorial chemistry.

56. (New) The method of claim 43, wherein the ~~physiologically~~ viable cells are supported by an optically clear substrate.

57. (New) The method of claim 42, wherein the solid support is a non-porous substrate and wherein the cells are grown on a porous membrane, whereby the test compounds are allowed to diffuse through the porous membrane to the cells layer.

*Sub C2*  
58. (New) A method for screening test compounds for bioactivity, comprising:

*b1*  
*Conf*  
(a) bringing an array of test compounds in close apposition with a detector layer, said array of test compounds being comprised of a plurality of test compounds, each of said test compounds being disposed on a solid support in a pattern whereby the *position of* each of said test compounds can be identified by a 2-dimensional coordinate; and  
(b) detecting a response of the detector layer to the test compound, wherein a response is indicative that a test compound is a bioactive compound.

*Sub B5*  
59. (New) A method for screening test compounds for bioactivity, comprising

(a) contacting an array of test compounds with a detector layer whereby each test compound comes into contact with a localized liquid which is in contact with the detector layer, wherein said array of test compounds is comprised of a plurality of test compounds, each of said test compounds being disposed on a